vigorous exercise to ensure protection. In general, reapplication two to four times throughout a day in the sun is wise. The recent fear of a few sunscreens containing carcinogens has not been confirmed.

In summary, there are excellent practical medications that prevent acute and chronic sun damage. The challenge is to convince people to use them.

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Autologous Skin Grafts for Leg Ulcers

CULTURED EPITHELIAL AUTOGRAFTS, a technique in which skin taken from the patient is expanded in the laboratory, show great promise in treating acute and chronic wounds. First used to treat extensive burns, epithelial autografts are now applied to chronic wounds such as decubitus and leg ulcers.

This method takes advantage of existing technology for culturing skin cells, or keratinocytes. A small skin biopsy is taken and cultured, and the cells multiply to form epidermal sheets several thousand times the area of the original biopsy. An initial 1-cm^2 specimen of skin can expand to cover large, denuded areas. On the day of grafting, the sheets are detached from their culture flasks, placed on Vaseline gauzes, and stapled or sutured to the area to be covered. The success of the grafting procedure depends on a meticulous preparation of the recipient bed and on immobilization of the grafted site because any shearing force will interfere with the graft's attachment.

There are several advantages to this technique. First, the donor site is much smaller than that needed for conventional grafting, and, because some cells are stored, it is possible to graft a second time without a second donor site. Second, the cosmetic appearance of these grafts is often superior to conventional grafts. Finally, cultured skin grafts relieve pain in chronic wounds, and the grafts themselves may promote healing through autocrine function.

Cultured epithelial autografts enable clinicians to treat large wounds using a small donor site. These grafts have been successfully used to treat acute wounds such as burns and chronic wounds such as leg ulcers. At facilities across the country, this technique shows great potential in promoting wound healing.

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Advances in Local Anesthesia

THE COMMONLY USED amide anesthetics, such as lidocaine, have been associated with pain on infiltration. Although the mechanism is unknown, it has been suggested that the acid pH used to stabilize the lidocaine, and more so the epinephrine, is the reason for the discomfort. Studies adding 1 ml of 8.4% sodium bicarbonate to 10 ml of lidocaine hydrochloride with or without epinephrine show a statistically significant decrease in the pain of infiltration, with no compromise in onset, duration, and extent of anesthetic efficacy. Other studies have confirmed that unbuffered anesthetic, freshly prepared buffered lidocaine with epinephrine, and week-old buffered material do not differ in anesthesia or vasoconstriction.

In addition, the search continues for an effective and safe topical anesthetic that is relatively nonsensitizing. In the US, a combination of tetracaine hydrochloride 0.5%, adrenaline 0.05%, and cocaine 11.8% has become increasingly popular in pretreating wounds to decrease the pain of suturing and local anesthetics. The main drawback is limited absorption through intact skin. While there has not been sufficient absorption of cocaine to cause euphoria or other systemic symptoms, there is enough to cause urine screening tests to be positive for cocaine for as long as 48 hours. This may represent a problem in an era of random testing in our society. This should be stocked as a prepared solution in emergency departments and other hospital pharmacies.

A topical combination anesthetic recommended for intact skin—a eutectic mixture of local anesthetics (EMLA)—has been available for use in Europe for several years. It is a combination of 2.5% lidocaine hydrochloride and 2.5% prilocaine hydrochloride, both long available as injectable and topically applied preparations. Studies have shown it to be 95% effective in creating superficial local anesthesia when used properly. Its limitations are that it requires about an hour under occlusion to reach this level of effectiveness, and the anesthesia is superficial. Reports have shown it to be adequate for argon laser, split-thickness skin grafts, and curettage of molluscum contagiosum. It also decreases the pain of the needle stick of local anesthetics and, in combination with buffered lidocaine, may be of real help. Some early work done with topical amethocaine shows it also to be a safe and effective topical anesthetic when applied under occlusion for 30 minutes.

In summary, several alternatives are or will soon be available for local anesthesia in anxious or difficult-to-treat patients.

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Bacillary Angiomatosis

SEVERAL PREVIOUSLY UNNOTICED opportunistic infections have come to light during the course of the current human immunodeficiency virus (HIV) epidemic, most notably oral hairy leukoplakia and bacillary angiomatosis. The latter, a